

PATENTS  
108041-0012

- 3 A. one or more monitoring subsystems associated with the one or more  
4 household appliances, each monitoring subsystem
- 5 i. continuously monitoring ~~the~~ operations of a given household  
6 appliance and retaining as functional data information relating to  
7 the functioning of the given household appliance,
- 8 ii. analyzing the functional data and related historical and  
9 statistical data maintained by the monitoring subsystem ~~to and~~  
10 ~~determining~~ if the household appliance is in need of attention  
11 to avoid a failure of the household appliance, and
- 12 iii. transmitting one or more warning and alarm messages,  
13 indicating that the household appliance requires attention, and  
14 related functional data, the alarm messages indicating that the  
15 household appliance requires immediate attention and the  
16 warning messages indicating that the household appliance  
17 requires later attention; and
- 18 B. a center for receiving the messages and related functional data transmitted  
19 sent by the monitoring subsystems in a plurality of households, the center
- 20 i. further analyzing the respective messages and the received  
21 functional data and related functional, historical and statistical data  
22 maintained by the service-center to produce an in-depth analysis of  
23 the overall data in accordance with the immediacy indicated by the  
24 warning and alarm messages,
- 25 ii. determining if one or more of the appliances requires other or more  
26 attention than is indicated by the one or more messages provided  
27 by the monitoring subsystems messages, and
- 28 iii. contacting one or more users of the associated household  
29 appliances to inform them of the particular attention required by

PATENTS  
108041-0012

30 the household appliances to avoid failures of the respective  
31 household appliances.

1 42. (previously presented) The system of claim 41, wherein the center further analyzes  
2 data from a plurality of appliances in a given household.

1 43. (previously amended) The system of claim 41, wherein the center further analyzes  
2 data from a plurality of appliances in a plurality of households.

1 44. cancelled

1 45. (currently amended) The system of claim 41, wherein the center  
2 further determines if service is required, and if so  
3 a. determines whether the user of the one or more appliances has a level-  
4 of-service contract that covers the particular service, and  
5 b. arranges service of the respective appliances in accordance with the  
6 provisions of the contract, if the user has the proper service contract.

1 46. (Previously presented) The system of claim 41, wherein the center distinguishes  
2 between repairs that require a service technician and repairs that are serviceable by a  
3 user.

1 47. (Previously presented) The system of claim 41, wherein the center analyzes patterns  
2 of use of the one or more appliances and schedules appropriate preventative maintenance  
3 checks.

PATENTS  
108041-0012

1 48. (currently amended) The system of claim 47, wherein the patterns of use analysis  
2 includes a number of cycles performed by a given appliance.

1 49. (currently amended) The system of claim ~~41~~47, wherein the center notifies the user  
2 what preventative maintenance is to be done if any maintenance is to be performed by the  
3 user.

1 50. (Previously presented) The system of claim 41, wherein the center  
2 determines if the one or more appliances are being used inefficiently by the user  
3 based on the related historical and statistical data, and  
4 recommends to the user a more efficient pattern of use for one or more of the  
5 appliances.

1 51. (currently amended) The system of claim ~~41~~47, wherein the center  
2 determines if a given appliance is an inefficient model based on the patterns of  
3 use and related historical and statistical data, and  
4 recommends to the user a more suitable replacement model for the appliance.

1 52. (currently amended) The system of claim 51, wherein the center arranges for the  
2 delivery and installation of the replacement appliance model selected by the user.

1 53. (currently amended) The system of claim 41, wherein each monitoring subsystem  
2 sets one or more local alarms when user attention is required by the appliance,  
3 and

PATENTS  
108041-0012

4 transmits a message indicating that the appliance requires attention and the related  
5 functional data if the user does not attend to the appliance within a predetermined time of  
6 setting the one or more local alarms.

1 54. (Previously presented) The system of claim 41, wherein each monitoring subsystem  
2 sends a local alarm of one appliance through all available appliances of a household to  
3 alert the user of a condition requiring attention.

1 55. (Previously presented) The system of claim 41, wherein the center alerts the user of  
2 a warning or alarm automatically, without the need for a human input at the center.

1 56. (Previously presented) The system of claim 41, wherein the center alerts the user of  
2 a warning or alarm manually, requiring a human input at the center.

1 57. (Previously presented) The system of claim 41, wherein one or more of the  
2 monitoring subsystems further monitor environmental conditions.

1 58. (currently amended) The system of claim 41, further comprising:

- 2 C. a network over which the monitoring subsystems transmit the messages;
- 3 D. a gateway connected to the network to receive the messages, the gateway
  - 4 i. transmitting alarm messages to the center as soon as the messages
  - 5 are received, and
  - 6 ii. retaining warning messages and transmitting the retained warning
  - 7 messages at predetermined times or when other transmissions are
  - 8 made to the center.

PATENTS  
108041-0012

1 59. (Previously presented) The system of claim 41, wherein the messages include  
2 headers in which at least one bit is set to one value to indicate alarm messages and set to  
3 another value to indicate warning messages.

1 60. (Previously presented) The system of claim 41, wherein the monitoring subsystem  
2 further  
3 associates flags with the messages and sets the respective flags to indicate that  
4 particular messages have been sent to the center,  
5 checks the flags to determine if a given message has already been sent, and  
6 sends a message if the flags indicate that the message has not been sent.

1 61. (currently amended) The system of claim 41, wherein  
2 one or more of the monitoring subsystems are adapters placed on appliances not  
3 originally equipped with monitoring subsystems, the adapters monitoring and analyzing  
4 at least the energy consumption of the associated appliances, and  
5 others of the remaining monitoring subsystems are originally installed on the  
6 associated appliances during assembly, the originally-installed monitoring subsystems  
7 monitoring and analyzing at least internal functions of the associated appliances.

1 62. (currently amended) A method for servicing one or more household appliances, the  
2 method comprising the steps of:  
3 at one or more monitoring subsystems associated with the one or more household  
4 appliances

PATENTS  
108041-0012

5 A. continuously monitoring the operations of a given household appliance  
6 and retaining as functional data information relating to the functioning of  
7 the given household appliance,

8 B. analyzing the functional data and related historical and statistical data  
9 maintained by the monitoring subsystem and determining if the household  
10 appliance is in need of attention to avoid a failure of the household appliance  
11 and producing alarm messages when it is determined that immediate attention  
12 is required, and producing warning messages when it is determined that other  
13 than immediate attention is required, and

14 C. transmitting one or more warning and alarm messages, indicating that  
15 the household appliance requires attention, and the related functional data;  
16 and

17 at a center for receiving the messages and related functional data transmitted sent  
18 by the monitoring subsystems in a plurality of households

19 A. further analyzing the respective messages and the received functional  
20 data and related functional, historical and statistical data maintained by the  
21 service center to produce an in-depth analysis of the overall data in  
22 accordance with the immediacy indicated by the warning and alarm  
23 messages,

24 B. determining if one or more of the appliances requires other or more  
25 attention than is indicated by the one or more monitoring subsystems, and

26 C. contacting one or more users of the associated household appliances to  
27 inform them of the particular attention required by the household  
28 appliances to avoid failures of the respective household appliances.

1 63. (Previously presented) The method of claim 62, wherein said step of further  
2 analyzing at the center further comprises:

PATENTS  
108041-0012

3 analyzing data from a plurality of appliances in a given household.

1 64. (Previously presented) The method of claim 62, wherein said step at the center of  
2 further analyzing further comprises:

3 analyzing data from a plurality of appliances in a plurality of households.

1 65. canceled

1 66. (currently amended) The method of claim 62, further comprising at the center the  
2 steps of:

3 further determining if service is required, and if so

4 a. determining whether the user of the one or more appliances has a level-  
5 of-service contract that covers the particular service, and

6 b. arranging service of the respective appliances in accordance with the  
7 provisions of the contract, if the user has the proper service contract.

1 67. (Previously presented) The method of claim 62, further comprising at the center the  
2 step of: distinguishing between repairs that require a service technician and repairs that  
3 are serviceable by a user.

1 68. (Previously presented) The method of claim 62, further comprising at the center the  
2 steps of:

3 analyzing patterns of use of the one or more appliances; and

4 scheduling appropriate preventative maintenance checks.

PATENTS  
108041-0012

1 69. (currently amended) The method of claim 68, wherein the patterns of use analysis  
2 includes a number of cycles performed by a given appliance.

1 70. (Previously presented) The method of claim 62, further comprising at the center the  
2 step of: notifying the user what preventative maintenance is to be done if any  
3 maintenance is to be performed by the user.

1 71. (Previously presented) The method of claim 62, further comprising at the center the  
2 steps of:  
3 determining if the one or more appliances are being used inefficiently by the user  
4 based on the related historical and statistical data, and  
5 recommending to the user a more efficient pattern of use for one or more of the  
6 appliances.

1 72. (currently amended) The method of claim ~~62~~68, further comprising at the center the  
2 steps of:  
3 determining if a given appliance is an inefficient model based on the patterns of  
4 use and related historical and statistical data, and  
5 recommending to the user a more suitable replacement model for the appliance.

1 73. (currently amended) The method of claim 72, further comprising at the center the  
2 step of: arranging for the delivery and installation of the replacement appliance model  
3 selected by the user.

1 74. (currently amended) The method of claim 62, further comprising at the one or more  
2 monitoring subsystems the steps of:



PATENTS  
108041-0012

3           setting one or more local alarms when user attention is required by the appliance;  
4   and  
5           transmitting a message indicating that the appliance requires attention and the  
6   related functional data if the user does not attend to the appliance within a predetermined  
7   time of setting the one or more local alarms.

1   75. (Previously presented) The method of claim 62, further comprising at the monitoring  
2   subsystem the step of: sending a local alarm of one appliance through all available  
3   appliances of a household to alert the user of a condition requiring attention.

1   76. (Previously presented) The method of claim 62, further comprising at the center the  
2   step of: alerting the user of a warning or alarm automatically, without the need for a  
3   human input at the center.

1   77. (Previously presented) The method of claim 62, further comprising at the center the  
2   step of: alerting the user of a warning or alarm manually, requiring a human input at the  
3   center.

1   78. (Previously presented) The method of claim 62, further comprising at the one or  
2   more monitoring subsystems the step of: further monitoring environmental conditions.

1   79. (currently amended) The method of claim 62, further comprising the steps of:  
2       transmitting, by the monitoring subsystems, the messages over a network;  
3       connecting a gateway to the network to receive the messages;

PATENTS  
108041-0012

4 transmitting, from the gateway, alarm messages to the center as soon as the  
5 messages are received; and  
6 retaining, at the gateway, warning messages and transmitting the retained warning  
7 messages at predetermined times or when other transmissions are made to the center.

1 80. (Previously presented) The method of claim 62, further comprising the step of:  
2 including headers in the message in which at least one bit is set to one value to indicate  
3 alarm messages and set to another value to indicate warning messages.

1 81. (Previously presented) The method of claim 62, further comprising the steps of:  
2 associating flags with the messages and sets the respective flags to indicate that  
3 particular messages have been sent to the center,  
4 checking the flags to determine if a given message has already been sent, and  
5 sending a message if the flags indicate that the message has not been sent.

1 82. (proposed draft amendment) The method of claim 62, wherein  
2 one or more of the monitoring subsystems are adapters placed on appliances not  
3 originally equipped with monitoring subsystems, the adapters monitoring and analyzing  
4 at least the energy consumption of the associated appliances, and  
5 others of the remaining monitoring subsystems are originally installed on the  
6 associated appliances during assembly, the originally-installed monitoring subsystems  
7 monitoring and analyzing at least internal functions of the associated appliances.